REMARKS

Claims 8, 9, 17, 18 and 20-23 have been previously cancelled without prejudice. Claims 1, 2, 15 and 24 have been previously presented. No changes to the claims listing are made in this response. Claims 1-7, 10-16, 19 and 24 remain before the Examiner for reconsideration.

In the Office Action dated December 18, 2003, the Examiner withdrew the rejection of the claims 1-7, 10-16, 19 and 24 under 35 U.S.C. Section, 103(a) as being anticipated by Takahashi (US 5,928,778) in view of O'Dell (US 5,866,209) as set forth in the final Office Action dated September 10, 2003. Moreover, the Examiner withdrew the finality of the rejection set forth in the Office Action dated September 10, 2003. However, the Examiner asserted that "despite these advances, the invention as currently claimed is not found to be patentable"

In that regard, the Examiner rejected claims 1 - 7, 10 - 16, 19 and 24 under 35 U.S.C. Section 103(a) "as being unpatentable over Takahashi et al. (US 5,928,778) in view of Davis (US 5,037,700)". Specifically, the Examiner asserted that:

> Takahashi teaches a decorative material which is excellent in flexibility and abrasion resistance (Abstract). The decorative material of this invention can be used for various purposes such as decorating surfaces of buildings, vehicles, ships, furniture, musical instruments, cabinets and decorating wrapping materials (column 11, lines 50 - 55).
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> As to claims 1, 15 and 24, Takahashi teaches a material including a substrate and an abrasion resistant coating layer. Takahashi teaches that substrate can be a paper, plastic film or sheet, or metallic foil or plate (column 1, lines 66 - 67). It is preferable to use a flexible material as the substrate (column 2, line 5). Takahashi teaches that the substrate can be a composite substrate which can be obtained by laminating two or more substrates by any known means, for instance, by the use of an adhesive agent, or by effecting thermal fusion (column 2, lines 66 - 67 and column 3, lines 1 - 3). The composite substrate comprising two or more substrates is equated to Applicant's "inner protective layer", "base material", "bonding material", "decorative material" and "outer decorative layer". Takahashi teaches that substrate can be a paper, plastic film or sheet, or metallic foil or plate (column 1, lines 66 - 67). Examples of the types of

paper are tissue paper, craft paper, titanium paper, linter paper, cardboard, plasterboard paper, raw fabric of so-called vinyl wall paper, high-grade paper, coated paper, art paper, vegetable parchment, glassine paper, animal parchment, paraffin paper and Japanese paper. In addition, paper-like sheets can be used as the substrate such as woven or nonwoven fabrics produced from inorganic fibers such as glass fiber, alumina fiber, silica fiber and carbon fiber or organic fibers such as polyester of Vinylon (column 2, lines 15 - 27). A plastic sheet can be used as a substrate in the form of an acrylic film (column 2, lines 36-37). It should be noted that the method of forming the "inner protective layer", the "bonding material" and the "outer protective layer" is not germane to the issue of patentability of the composite material itself. Therefore, the limitation of "an aqueous acrylic polymer dispersion medium which is applied wet and bond upon drying is not given weight". Due to the fact that a composite substrate can be used, one embodiment of Takahashi, a composite substrate of 4 layers can be used. For instance, Takahashi teaches a "base material" bonded to an "inner protective layer", a "bonding material" bonded to the second side of the base material, a "decorative layer" such as a paper or a paper-like sheet bonded to the "base material" and an abrasion resistant coating layer, or "outer protective layer", on the opposing side of the "decorative layer". In one embodiment of Takahashi, the "inner protective layer", the "bonding material" and "outer protective layer" can be comprised of acrylic film (column 2, lines 37 - 40).

Takahashi teaches that the substrate can be a composite substrate which can be obtained by laminating two or more substrates by any known means, for instance, by effecting thermal fusion (column 2, lines 66 - 67 and column 3, lines 1 - 3). Therefore, in the embodiment where the "inner protective layer", the "bonding material" and "outer protective layer" are acrylic films, any application of thermal fusion to the acrylic films would bond the "base material" and the "decorative layer" together to created the desired composite of the Applicant.

However, as to claims 1, 5 - 7, 15, 19 and 24, Taskahashi fails to teach that acrylic films which bind the layers together can be in the can be in the form of an aqueous acrylic polymer dispersion medium which is applied wet and bonds upon drying.

Davis is directed to flexible laminates useful for a wide range of applications such as flexible packaging, graphic arts and industrial uses (column 1, lines 25 - 35). Davis teaches a laminate comprising various layers consisting of wovens, non-wovens, paper and other flexible materials (column 2, lines 40 - 60). Davis teaches bonding the layers together using a water-borne laminating adhesive comprising a copolymer of an akyl acrylate or alkyl methacrylate (Abstract). Davis notes that the use of the water-borne laminating adhesive creates a laminate with high bond strength, superior heat resistance and chemical and water resistance

(Abstract). It should be noted that acrylic is inherently water resistant and translucent as required by claims 5 -7 and 19.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the water-borne laminating adhesive comprising a copolymer of an akyl acrylate or alkyl methacrylate as suggested by Davis to laminate the layers of Takahashi motivated by the desire to create a flexible laminate with superior heat, chemical and water resistance.

As to claims 2 and 3, Takahashi teaches that the "base material" can be made out of a paper-like sheet such as a nonwoven comprising fibers such as carbon or alumina fibers (column 2, lines 21 - 26), which are known in the art to be high in strength.

As to claim 4, Takahashi teaches that the substrate can be a composite substrate which can be obtained by laminating two or more substrates, therefore, an additional paper-like layer such as a "woven backing" could be attached to the "base material".

As to claims 10, 11 and 16, Takahashi teaches that the "decorative layer" can be comprised of paper. Vegetable parchment paper among other papers (column 2, lines 14 - 26) typically has a textured finish and can have a generally random wrinkled pattern. Takahashi also notes that is possible to use a substrate having a rough or three-dimensional pattern (column 2, lines 9 - 14).

As to claim 12, Takahashi teaches that the "decorative layer" can be a board such as veneer (column 2, lines 45 - 50), which has a hard finish.

As to claim 13, Takahashi teaches that the "decorative layer" can be a paper such as vegetable parchment paper (column 2, lines 14 - 26), which has a smooth or calendared finish.

As to claim 14, Takahashi teaches that the "decorative layer" can be a paper-like material such as a woven fabric comprising alumina and carbon fibers (column 2, lines 21 - 27). A paper-like material implies a smooth or semi-smooth surface, therefore, the woven fabric would have to be woven tightly to give a smooth appearance. The "decorative layer" would have a hard finish due to fiber content of high strength rigid fibers.

Applicant respectfully traverse the Examiner's rejection.

Once again, Takahashi et al. discloses a decorative material quite dissimilar from the composite material of the present invention. In that regard, the decorative material of Takahashi et al. must have a relatively high abrasion resistance to

make it useful for various purposes including "decorating the surfaces of buildings, vehicles, ships, furniture, musical instruments, cabinets and the like, and also for decorating wrapping materials." Col. 11, lines 50-57. To achieve the high abrasion resistance the material of Takahashi et al. includes an "abrasion-resistant" coating formed on a substrate. The abrasion-resistant coating includes spherical inorganic particles having a defined particle diameter and hardness and a binder material including a crosslinkable resin. The crosslinkable resin can be a thermosetting resin such as a two-pack urethane resin, an epoxy resin, an alkyd resin or an unsaturated polyester resin. Col. 5, lines 42-45. The crosslinkable resin of Takahashi et al. is preferably, however, an ionizing radiation-curing resin (cured via irradiation with ionizing energy) such as "unsaturated polyester resin, compounds having (meth)acryloyl group [monofunctional (meth)acrylate, polyfunctional (meth)acrylate, urethane (meth)acrylate, polyester (meth)acrylate, epoxy (meth)acrylate, etc.], vinyl compounds [styrene, divinylbenzene, etc.], allyl compounds [diallylphthalate, etc.], and mixtures of two or more of these compounds." Col. 6, lines 1-7.

Thus, unlike, the bonding/binding layer and outer layer materials of the present invention, which are formed from an aqueous acrylic polymer dispersion medium upon drying, the polyfunctional meth(acrylate) of Takahashi et al. is an ionizing-radiation-curing (that is, cross-linking) resin.

Moreover, the teaching in Takahashi et al. that the substrate thereof can be a composite substrate which can be obtained by laminating two or more of the various substrates listed in Takahashi et al. does not disclose or suggest the composite material of the present invention in which at least one layer of base material has on a first side thereof at least one inner protective layer of a flexible material including an aqueous acrylic polymer dispersion medium, and in which at least one decorative layer is bonded to base material on the other side thereof using an aqueous acrylic polymer dispersion medium which bonds upon drying.

Initially, Applicant respectfully asserts that the Examiner's disregard of the claim limitation that "the inner protective layer, the bonding material and outer protective layer include an aqueous acrylic polymer dispersion medium which is applied wet and bonds upon drying", relying upon the assertion that "the method of forming the 'inner protective layer', the 'bonding material' and the 'outer protective layer' [of the present invention] is not germane to the issue of patentability of the composite material thereof" is clearly erroneous. In that regard, that the aqueous acrylic polymer medium of the present invention is applied wet and bonds upon drying is clearly a limitation upon the physiochemical nature of the acrylic polymer dispersion medium of the inner protective layer, the bonding material and the outer protective layer of the present invention and is not a process limitation. However, even if the claim limitation was a process or method limitation, it is well accepted that an Applicant can define a product in a claim in terms of the method of its production. The Examiner cannot continue to impermissibly ignore this express claim limitation. See Ex Parte Murphy and Burford, 217 USPQ 479, 481 (P.O. Bd. Appls. 1982) ("it is error to ignore specific limitations distinguishing over the cited reference"); In re Boe, 505 F.2d 1297, 184 USPQ 38 (CCPA).

Applicants further respectfully assert that the Examiner's assertion that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the water-borne laminating adhesive comprising a copolymer of an akyl acrylate or alkyl methacrylate as suggested by Davis to laminate the layers of Takahashi motivated by the desire to create a flexible laminate with superior heat, chemical and water resistance" is erroneous. Initially, there is absolutely no motivation in either Takahashi et al. or Davis for combination thereof. See, for example, *Ex parte* Chicago Rawhide Mfg. Co., 223 USPQ 351, 353 (P.O. Bd. Appl. 1984) ("The prior art must provide a motivation or reason for a worker in the art without the benefit of appellant's specification to make the necessary changes in the reference device."); Schenk v. Norton, 218 USPQ 698, 702 (Fed. Cir. 1983) ("Modification unwarranted by the disclosure of a reference is improper."); Ex Parte Acosta, 211 USPQ 636, 637 (P.O. Bd. Appls. 1980) (Examiner's combination of two references is improper where there is no basis in the

record from which it can reasonably be inferred that one skilled in the art would have been led or motivated to modify the primary reference in the manner proposed by the Examiner.).

For example, the surface of the materials of Takahashi et al. requires a reactive, cross-linkable resin of very high abrasion resistance. To the contrary, Davis discloses a flexible adhesive that is used as an intermediate adhesive between two layers or lamina. There is no disclosure or suggestion in Davis that the adhesive thereof is suitable for use as a surface layer. Indeed, it is unlikely that the adhesive of Davis would be suitable to form a very high abrasion resistant material as required for the surfaces of Takahashi et al. It is well established that it is not obvious to modify a prior art reference in such a manner that would make it inoperable for its stated purpose. See, for example, *In re* Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); Hughes Air Craft Co. v. United States, 215 USPQ 787, 804 (Ct. Cl. Trial Div. 1982), aff'd in part, rev'd in part, 717 F.2d 1351, 219 USPQ 473 (Fed. Cir. 1983).

The Examiner is further incorrect, that Takahashi et al. discloses that an "inner protective layer", a "bonding material" and an "outer protective layer" can be comprised of an acrylic film at column 2, lines 37-40 thereof. Takahashi et al. discloses merely that a substrate to which the abrasion resistant coatings thereof can be applied can comprise a plastic sheet.

In any event, the disclosure of Davis. does not overcome the deficiencies of Takahashi et al. set forth above. In that regards, unlike the present invention, Davis discloses a process for forming a laminate using an adhesive comprising at least 60% by weight of an alkyl acrylate, alkyl methacralate, styrene or vinyl ester of a saturated monocarboxylic acid having 2 to 10 carbon atoms, or mixtures thereof. Davis does not disclose or suggest a bonding material and an outer protective layer that include an aqueous acrylic polymer dispersion medium which is applied wet and bonds upon drying as claimed in the present invention. To the contrary, the adhesive of Davis requires industrial mechanical application/coating techniques, followed by removal of water and

any solvents via oven heating, followed by pressure combination, followed by a 72-hour curing period. At column 3, lines 38-56, Davis sets forth the process of using the adhesive thereof as follows:

> In forming the laminate of the present invention, conventional techniques known per se are employed to apply the adhesive emulsion to the film substrate. Thus, these adhesives may be applied by use of any mechanical coating process such as air knife, trailing blade, knife coater, reverse roll or gravure coating technique. Subsequent to its application, the adhesive coated film is then ordinarily passed through an oven to remove substantially all the water and solvent, if any, and then pressure combined (roller nipped) at a temperature from about 25.degree. to 150.degree. C. to form a bond with, for example, a corona treated polyethylene or polypropylene film, or other lamina.
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> The resultant laminate is characterized by the immediate formation of a strong bond followed by cure during an approximate 72 hour period for development of further strength and heat, chemical and water resistance as required for use as a flexible food package or other end-use

Takahashi et al. indicates that a composite substrate for use therein can be obtained by laminating two or more substrates "by any known means, for instance, by the use of an adhesive agent, or by effecting thermal fusion" Col. 2, line 66 to Col. 3 line 3. The disclosure of Davis merely sets forth a process of lamination via application of an adhesive. One of ordinary skill in the art would not and could not combine the teachings of Takahashi et al and the teachings of Davis to arrive at the present invention.

Furthermore, unlike the materials of Takahashi et al. and O'Dell et al., the aqueous acrylic polymer dispersion media of the present invention are inherently very safe materials that are quite easy to work with – generally applied as a wet aqueous dispersion and allowed to dry. Indeed, such media are commercially available as artists' media. Such materials would be unusable in the articles of Takahashi et al. and Davis. Unlike, the materials of Takahashi et al. and Davis, the composite materials of the present invention can be used in the manner of traditional fabrics. Likewise, and unlike the materials of Takahashi et al. and Davis, the composite materials of the present invention are equally well suited for commercial mass production or for home production/use by individuals.

In view of the above remarks, Applicant respectfully requests that the Examiner withdraw rejection of the claims set forth in the Office Action of September 10, 2003, indicate the allowability of these claims and arrange for an official Notice of Allowance to be issued in due course.

Respectfully submitted,

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